What is claimed is:

1. A switching valve assembly for use in a mixing faucet operable to mix hot water and cold water at a desired temperature and selectively stop and discharge said mixed water, said switching valve assembly comprising:

a manual operation member adapted to be moved in response to a pressing operation by a user;

a push rod member having a base end joined to said manual operation member;

a pilot valve disposed relative to a distal end of said push rod member;

a buffer device interposed between said pilot valve and said distal end of said push rod member;

a diaphragm main valve having a pilot-valve port designed such that said pilot valve is selectively brought into contact therewith and separated therefrom;

a pressure chamber formed on the side of a back surface of said main valve to contain a part of said push rod member, said pilot valve and said buffer device; and

a valve seat designed such that a front surface of said main valve is selectively seated thereon and unseated therefrom.

2. The switching valve assembly according to claim 1, wherein said buffer device is a coil spring having a spring constant of 0.01 to 2 N/mm.

3. The switching valve assembly according to claim 1, wherein said buffer device is a coil spring having a spring constant of 0.01 to 0.75 N/mm.

4. The switching valve assembly according to claim 1, wherein said buffer device is a coil spring having a spring constant of 0.01 to $P_1d^2\pi / (4\delta)$ N/mm, wherein $\delta$ is the amount of deflection (mm) of said coil spring, $P_1$ is a water pressure (MPa), and d is the diameter (mm) of a rod portion of said push rod member.

5. The switching valve assembly according to any of claims 1 to 4, wherein said push rod member is formed to have a smaller diameter than that of said pilot-valve port.

6. The switching valve assembly according to any of claims 1 to 5, wherein said push rod member is made of stainless steel.

7. The switching valve assembly according to any of claims 1 to 6, which further includes a pilot-valve switching/holding mechanism operable to selectively switch said pilot valve between a water-stop position and a water-discharge position in conjunction with the movement of said manual operation member and hold said pilot valve in either one of said water-stop position and said water-discharge position, said pilot-valve switching/holding mechanism having a heart cam structure.

8. The switching valve assembly according to any of claims 1 to 7, wherein said mixing faucet comprises a faucet body, a faucet push button for discharging the mixed water directly from a faucet, and a shower push button for discharging the mixed water from a shower, each of said faucet and shower push buttons having a biasing device adapted to press said push button downward when said push button is located in a water-discharge position and above a top surface of said faucet body.

9. A switching valve assembly comprising:

a manual operation member adapted to be moved in response to a pressing operation by a user;

a push rod member having a base end joined to said manual operation member;

a pilot valve disposed relative to a distal end of said push rod member;

a buffer device interposed between said pilot valve and said distal end of

said push rod member;

a diaphragm main valve having a pilot-valve port designed such that said pilot valve is selectively brought into contact therewith and separated therefrom;

a pressure chamber formed on the side of a back surface of said main valve to contain a part of said push rod member, said pilot valve and said buffer device; and

a valve seat designed such that a front surface of said main valve is selectively seated thereon and unseated therefrom.